

Acute Brain Stem Infarction – A Case Report

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Clinical History

A 79 years old lady was admitted with recurrent headaches, a sudden onset of left upper and lower limb weakness and progressive drowsiness.

She had a history of hypertension, transient cerebral ischaemic attacks, hypercholesterolaemia and chronic renal disease presumed to be secondary to renovascular disease. She was treated with regular erythropoietin injections in the Renal clinic.

On admission she had a regular pulse at 70 / minute and blood pressure 165/77 mmHg supine. There were no signs of heart failure. At initial assessment, left hemiparesis and a possible left visual field defect were noted but no overt homonymous hemianopia. The left plantar response was extensor and the right flexor. There was subtle incoordination in the right upper and lower limbs on the finger-nose and the heel-shen tests, respectively at admission but these became more obvious after three days. She had no dysphagia.

Full blood count, liver function tests, chest radiograph and 12 lead electrocardiogram (ECG) were unremarkable. The serum creatinine was 260µmol/Litre (40-90µmol/L and urea 16mmol/L (2.5-7.8mmol/L). The calcium level was slightly elevated to 2.80mmol/L (2.2mmol/L-2.65mmol/L) with serum albumin within the normal reference range for our laboratory, parathyroid hormone and phosphate.

Computed tomography (CT) Brain - at admission 90 minutes post onset of symptoms (Figure 1)

There was a hyperdense appearance of the lumen of the basilar artery and parts of the right posterior cerebral artery suggestive of thromboembolic changes and acute ischaemia. There was no evidence of clearly demarcated ischaemic changes, mid line shift or signs of raised intracranial pressure. No intracranial haemorrhage, haematoma or space occupying lesion was identified. A fusiform dilatation of the left internal carotid artery and middle cerebral artery and an advanced degree of small vessel disease were noted.



Figure 1: Non-enhanced CT of the brain. Hyperdense appearance of the basilar artery suggestive of a thrombus.



Figure 2: Non-enhanced CT of the brain. Hypodense appearance of brainstem and parts of the right cerebellar hemisphere in keeping with now demarcated subacute ischaemic changes.

CT Brain - 5 days post onset of symptoms (Figure 2). Right pontine and small right cerebellar hemisphere subacute infarcts had now appeared. There was still a little increased density in the basilar and right posterior cerebral artery. No intra-axial or extra-axial haemorrhage was seen on this scan.

From these images it was concluded that there was acute thromboembolic ischaemia of the basilar artery and right posterior cerebral artery.

Management

Thrombolysis was considered but rejected because of the “fusiform aneurysmal” appearance of the left internal carotid artery and middle cerebral artery on the initial brain CT scan. Rehabilitation by the stroke Multidisciplinary Team was instituted in the Stroke Unit.

Comment

This patient presented with acute posterior circulation ischaemic stroke involving the right pons and right cerebellar hemisphere. But for the aneurysms in the left internal carotid and middle cerebral arteries this patient would have benefitted from thrombolysis, possibly with total resolution of her symptoms. The multiple anatomical site involvement suggests thromboembolic stroke which required long term anticoagulation with a vitamin K antagonist. Though atrial fibrillation was not documented on her admission 12 lead ECG part of her management plan included a twenty four hour Holter monitoring to establish the presence of paroxysmal atrial fibrillation. The clinical symptoms described were consistent with pontine and cerebellar lesions. After Multidisciplinary Rehabilitation the patient made slow progress complicated by intercurrent hospital acquired pneumonia.